

Carol Williamson, Sawyer County Clerk  
Sawyer County Courthouse  
10610 Main Street, Suite 10; Hayward, Wisconsin 54843  
email address – cwilliamson@sawyercountygov.org  
telephone numbers 715.634.4866 and toll free 877.699.4110



Note: The Board may take action on any or all items listed on the following agenda.

#### AGENDA

Sawyer County Board of Supervisors meeting  
Thursday, October 20, 2016; 6:30 p.m.; Large Courtroom; Sawyer County Courthouse

01. Call to order, Roll Call, Pledge of Allegiance
02. Certification of compliance with the open meetings law
03. Meeting agenda
04. Public Comments
05. Minutes of the September 15, 2016 meeting
06. Economic Development Committee
  - A. Recommendation to Approve Establishing an Economic Development Association
07. Zoning
  - A. Revision in language to Agricultural One District Zoning Ordinance
  - B. Amendment to Zone District Maps – Case #16-008, Arie & Phyllis TePaske
  - C. Amendment to Zone District Maps – Case #16-009, Stone Lake Lumber LLC
08. Public Works
  - A. Resolution Petitioning the Secretary of Transportation for Airport Improvement Aid / Agency Agreement and Federal Block Grant Owner Assurances
09. Administration Committee
  - A. Presentation of 2017 Requested Budget
  - B. Resolution to increase the 2016 Emergency Government Department Budget for Additional Grant Funds Received-Hazardous Materials Training
  - C. Resolution to Transfer Funds from the 2016 General Fund to the 2016 Land & Water Conservation Fund
  - D. LiDAR Project and grant application
  - E. Approval of Signature Card Change for Clerk of Court
10. Correspondence, reports from conferences and meetings, other matters for discussion only

CW

Carol Williamson  
Sawyer County Clerk

Emailed to: Sawyer County Record, Sawyer County Gazette, WRLS, WHSM, AND WOJB, Hayward Library, and Village of Winter for posting on Friday, October 14, 2016, 3:30 p.m. by Carol Williamson.

Draft

Minutes of the meeting of the Sawyer County Board of Supervisors

Thursday, September 15, 2016, 6:30 pm; Large Courtroom, Sawyer County Courthouse

County Board Chair Ron Kinsley called the September meeting of the Sawyer County Board of Supervisors to order. Roll call was as follows (x indicates present):

district - supervisor - T = Town, V = Village, C = City, W = Ward

- x 01 - Dale Schleeter – T Lenroot W 1, T Hayward W 7, C Hayward W 5 and 6
- x 02 - Kathy McCoy – T Lenroot W 2, T Round Lake W 1
- x 03 - Tweed Shuman – T Hayward W 1 and 2
- x 04 - Iras Humphreys – T Hayward W 3 and 4
- x 05 – James H. Schlender Jr. – T Hayward W 5 and 6
- x 06 – Marc D. Helwig – C Hayward W 1 and 2
- x 07 - Thomas W. Duffy – C Hayward W 3 and 4
- x 08 - Bruce Paulsen – T Bass Lake W 1 and 2
- x 09 - Brian Bisonette – T Bass Lake W 3 and 4
- x 10 – Elaine Nyberg – T Sand Lake, T Edgewater W 1
- x 11 - Jim Bassett – T Edgewater W 2, T Bass Lake W 5, T Hayward W 8, T Meteor, T Couderay, V Couderay
- x 12 - William Voight – T Spider Lake, T Round Lake W 2, T Winter W 1
- x 13 - Ron Kinsley – T Hunter, T Radisson W 1, T Ojibwa W 1, V Radisson
- x 14 – Ron Buckholtz – T Radisson W 2, T Ojibwa W 2, T Weirgor, V Exeland, T Meadowbrook
- 15 – Helen Dennis – T Winter W 2, T Draper, V Winter

The agenda for the meeting was presented as follows:

01. Call to order, Roll Call, Pledge of Allegiance
02. Certification of compliance with the open meetings law
03. Meeting agenda
04. Public Comments
05. Minutes of the August 18 , 2016 meeting
06. Human Services Committee
  - A. Resolution in Support of Increased Funding in the Children and Family Aids Allocation
07. Public Safety Committee
  - A. Resolution for the Creation of a Crime Victim/Witness Program
  - B. Resolution to Approve Sawyer County ARES/RACES to Place a Repeater on the Pipestone Tower
  - C. Recommendation for full-time ambulance service
  - D. Recommendation to approve Ambulance Fee Proposed Rate Increase Option 1
08. Economic Development Committee
  - A. Sawyer County UW-Extension Agents Contract 13-PRJ89VD
09. Zoning
  - A. Denial of amendment to Sawyer County Zone District Maps - Case #16-007, Weldon Hersey
10. Administration Committee
  - A. Compensation Study Update
  - B. Resolution to amend the 2015 Sawyer County Budget per Wisconsin State Statute 65.90(5)
  - C. Resolution to Reallocate Funds from the 2016 Contingency Budget to the 2016 Information Technology Department Budget-Court AV System; \$40,000

11. **Closed Session**, pursuant to section 19.85(1) (e) Deliberating or negotiating the purchase of public properties, the investing of public funds, or conducting other specific public business, whenever competitive or bargaining reasons require a closed session.
12. The Board will reconvene into open session at the end of the closed session and may announce or take action on matters discussed in the closed session.
13. Correspondence, reports from conferences and meetings, other matters for discussion only

Motion by Duffy, 2<sup>nd</sup> by Bassett, to approve the agenda. Motion carried

Motion by Voight, 2<sup>nd</sup> by Duffy, to approve the minutes of the August 18, 2016 meeting. Motion carried

Recommendation from the Health and Human Services Committee to approve a resolution in support of increased funding in the Children and Family Aids allocation. Motion by Bassett, 2<sup>nd</sup> by Schleeter, to approve the Resolution. Motion carried

Recommendation from Public Safety to establish a half-time victim/witness coordinator position. Motion by Duffy, 2<sup>nd</sup> by Shuman to approve the Resolution for the Creation of a Crime Victim/Witness Program. Motion carried.

Motion by Bassett, 2<sup>nd</sup> by Buckholtz, to approve the Resolution to Approve the Sawyer County ARES/RACES to place a repeater on the Pipestone Tower. Motion carried.

Recommendation from Public Safety for Full-time Ambulance was postponed until the Ambulance Service Study is completed.

New ambulance billing software will not accommodate the current fee structure. Motion by Helwig, 2<sup>nd</sup> by Paulsen to approve Rate Increase Option 1, effective October 1, 2016. Motion carried

Motion by Paulsen, 2<sup>nd</sup> by Shuman to approve the Sawyer County UW-Extension Agents Contract 13-PRJ89VD. Motion carried

Zoning Committee recommends denial of a rezone application in Stone Lake due to non-compatibility. The rezone was approved by the Town of Sand Lake. The land was rezoned to RR1 in a comprehensive rezone in 1995. The land and the surrounding land to the West, South, and East is currently farmed. Motion by McCoy, 2<sup>nd</sup> by Shuman to deny the Zoning Committee recommendation to deny the rezone. Motion carried. Motion by McCoy, 2<sup>nd</sup> by Schlender, to approve the rezone application and rezone from Residential/Recreation One (RR-1) to District Agricultural Two. Motion carried

Patrick Glynn from Carlson Dettman did a power-point presentation for the board on the compensation study. The original implementation appears flawed. Recommendation #1 includes fully implementing the existing wage structure with step progression included in the 2017 budget.

Accounting Manager Mike Keefe presented revenue and expense adjustments to bring the 2015 budget into compliance. Total changes are \$1,114,847; the net bottom line impact is approximately \$100,000. Motion by Paulsen, 2<sup>nd</sup> by Helwig to approve the Resolution to amend the 2015 Sawyer County Budget Per Wisconsin State Statute 65.90(5). Motion carried unanimous

Motion by Paulsen, 2<sup>nd</sup> by Schlender, to approve the Resolution to Reallocate funds from the 2016 Contingency Budget to the 2016 Information Technology Department Budget-Court AV System. Motion carried Unanimous

Motion by Schlender, 2<sup>nd</sup> by Shuman, to convene into Closed Session pursuant to section 19.85(1) (e) for deliberating or negotiating the purchase of public properties, the investing of public funds, or conducting other specific public business, whenever competitive or bargaining reasons require a closed session. Motion carried

Tom Duffy exited the meeting and was not present for Closed Session.

The County Board reconvened into open session.

Motion by Shuman, 2<sup>nd</sup> by Bassett, to move forward with the Railroad Acquisition/Development grant to purchase property and build a bridge. Roll call vote. Helwig – yes; Duffy –absent; Paulsen – no; Bisonette – yes; Nyberg – no; Bassett – yes; Voight – no; Kinsley – no; Buckholtz – no; Dennis – absent; Schleeter – no; McCoy – yes; Shuman – yes; Humphreys – no; Schlender – yes;. The motion failed with 6 voting yes, 7 voting no.

Motion by Buckholtz, 2<sup>nd</sup> by Humphreys to not pursue the Railroad Acquisition/Development grant to purchase property and build a bridge. Roll call vote. Duffy –absent; Paulsen – yes; Bisonette – no; Nyberg – yes; Bassett – no; Voight – yes; Kinsley – yes; Buckholtz – yes; Dennis – absent; Schleeter – yes; McCoy – no; Shuman – no; Humphreys – yes; Schlender – no; Helwig – no; The motion carried with 7 voting yes, 6 voting no.

Motion by Bassett, 2<sup>nd</sup> by Schlender, to adjourn. Motion carried

Minutes prepared by Sawyer County Clerk Carol Williamson

Draft

Minutes of the meeting of the Economic Development and UW-Extension Committee  
Sawyer County Board of Supervisors  
October 10, 2016; 8:30 a.m.; Assembly Room; Sawyer County Courthouse

Members present: Tom Duffy, Bruce Paulsen, Brian Bisonette, James Schlender arrived 8:35 am

Others present: Mike Keefe, , Don Semler, Lori Baltrusis, , Jeff Dietrich, Frank Zufall, , Ron Kubarek, John Saunders, Linda Zilmer, Carol Williamson

Motion by Paulsen, 2<sup>nd</sup> by Bisonette, to approve the agenda. Motion carried

Motion by Bisonette, 2<sup>nd</sup> by Paulsen, to approve the minutes of the September 12, 2016 meeting. Motion carried

John Saunders presented the 4<sup>th</sup> Quarter Report from the Bike/Ped Committee

CenturyLink Regional Manager Tom Braml was unable to attend the meeting. Broadband Committee member Don Semler gave an update on the CenturyLink coverage roll out costs for service. Indianhead may be able to cover a portion of the 12% that will not be covered by CenturyLink. Norhtwoods Connect can possibly cover the remaining residents. The number of residents that will be covered by the CenturyLink rollout changes as the coverage area is more defined.

The 2017 budget is in process: a ½ time position remains in the Extension budget, the Sawyer County Fair and the Visitors Convention Bureau are the same as 2016.

UW-Extension Family Living Educator Lori Baltrusis provided the Committee with a report and review of her efforts and priorities as the Family Living Agent.

Northwest Regional Planning Representative Jeff Dietrich informed the Committee of \$2.3 million available for emergency repairs in the seven counties that filed a Presidential Declaration. NWRP will hold the license for the software for the Flood Analysis.

Supervisor Bruce Paulsen provided a proposal to establish a Sawyer County Economic Development Association with a county contribution of \$5,000. Motion by Schlender, 2<sup>nd</sup> by Bisonette to recommend approval to the County Board. Motion carried

Motion by Schlender, 2<sup>nd</sup> by Bisonette, to adjourn. Motion carried.

Minutes prepared by Sawyer County Clerk Carol Williamson

Sawyer County  
Economic Development Committee

**Proposal:** Establish a Sawyer County Economic Development Association

**Mission of Association:** Provide assistance to existing businesses in Sawyer County, helping them thrive and attract or develop new businesses. (Final mission would be determined by the association members)

**Association Membership:** There would be 11 members. One member each from the Sawyer County board of supervisors and the Lac Courte Oreilles Tribe, representatives from local utilities, financial institutions, chamber of commerce and representative/s from other areas of the county outside of Hayward. Representatives would be chosen from:

- Xcel, Jump River and North Central Power
- Chippewa Valley Bank, Johnson Bank, Peoples Bank of Wisconsin, Bank Mutual and Hayward Community Credit Union.
- Hayward Area Chamber of Commerce
- Winter area representative
- Individuals with a proven interest in business development

**General Discussion:** The Association would be non-profit entity, not part of Sawyer County. It would be volunteer organization. It is anticipated that if funding is needed it would be primarily for grant writing and out of pocket expenses. Sources of funding could include community contributions and/or the County.

**County Contribution:** \$5000 of seed money to cover out of pocket expenses and costs to set up the legal structure of the association

**Next Steps:**

- Select association members
- Determine if the legal structure of the old economic development entity can be used. If not determine what the legal structure should be and establish that structure.

BLP  
10/3/16

#### **17.4 A- Agricultural One District**

This district is intended to provide for the continuation of general farming and related activities in those areas best suited for such development and to provide for orderly development of residential, commercial and industrial development.

##### **A) Permitted Uses**

- 1) A farm residence occupied by owner and /or persons engaging in farming activities on the premises. Town Board and Zoning Administrator approval is required for owners and/or persons not engaged in farming activities on the premises.
- 2) Buildings, structures or improvements that are an integral part of or incidental to an agricultural use.
- 3) An activity or business operation that is an integral part of or incidental to an agricultural use.
- 4) A business, activity or enterprise, whether or not associated with an agricultural use, that is conducted by the owner or operator of a farm that requires no buildings, structures or improvement other than a farm residence, buildings, structures or improvements that are an integral part of or incidental to an agricultural use that employs no more than four (4) full-time employees annually and that does not impair or limit the current or future agricultural use of the farm or of other farmland
- 5) Road side stands for the sale of products grown on the premises if sufficient off-street parking space is provided
- 6) Essential services and utilities intended to serve a permitted principal use on the premises.
- 7) Signs subject to the provisions of Section 5.0
- 8) Soil and water conservation programs.
- 9) Drainage where such activity will not be in conflict with the stated purposes of this zone district.
- 10) Licensed in-home day care/child care (no more than eight (8) children) meeting the conditions of Section 17.4 A 4
- 11) Agricultural use and agricultural related uses would include:
  - a. Crop or forage production
  - b. Keeping of livestock
  - c. Nursery, and or Christmas tree production
  - d. Floriculture
  - e. Aquaculture
  - f. Fur farming
  - g. Forest management and tree farms
  - h. Enrolling land in a federal agricultural commodity payment program of a federal or state agricultural land conservation payment program.
  - i. Agricultural processing industries and warehouse, except slaughter houses, rendering, and fertilizer plants
  - j. Vacation farms and other farm oriented recreational uses such as riding stables, sports activities, and game farms subject to the conditions of Section 17.4 A 4
  - k. An agricultural equipment dealership, facility providing agricultural supplies, facility for storing or processing agricultural produces, or facility of processing agricultural wastes.

l) Any other use that is defined in Wisconsin State Statute 91.01

**B) Authorized by Conditional Use Permit**

1) The location, operation and maintenance of municipal sanitary landfills, solid waste disposal sites, sewage disposal plants; and privately owned domestic sewage treatment works; and necessary appurtenant equipment/structures subject to the provision of the Wisconsin Administrative code.

2) Slaughterhouses, rendering and fertilizer plants

3) Public and semi-public uses including but not limited to: public and private schools; churches; public parks and recreation areas; hospitals; rest homes; homes for the aged; fire, ambulance and police stations; and historic sites

4) Transportation, communications, pipeline, electronic transmission, utility or drainage use provide that the following apply:

- a. The uses are consistent with and compatible with agricultural uses, accessory uses or agricultural related use
- b. The use and location are reasonable and appropriate, considering alternative locations or are specifically approved under state or federal law
- c. The use is reasonably designed to minimize conversion land at and around the site from agricultural use or open space use
- d. The use does not substantially impair or limit the current or future agricultural uses of surrounding parcels of land that are Zone Districts A-1 or A-2.
- e. The construction damage to land remaining in agricultural use is minimized and repaired to the extent feasible.

4. Accessory structure on vacant property lying across a Town of County Road from the principle structure according to Section 4.26 (2)

5. Like or similar uses in the opinion of the Zoning Administrator, subject to the procedures for obtaining a conditional use permit and any applicable provision of Chapter 91 State Statute.

**C) Conflict with State Statute**

If any permitted uses or uses authorized by conditional use permit conflict with Wisconsin State Statute Chapter 91 State Statute will prevail.



Town of Winter  
County of Sawyer

July 13 2016 Date  
**RECEIVED**  
JUL 14 2016  
SAWYER COUNTY  
ZONING ADMINISTRATION

**SUBJECT:** Change of Zone District Application

**TO:** Sawyer County Zoning & Conservation Administration  
10610 Main St. Suite 49  
Hayward, Wisconsin 54843

**Owner:** Arie A & Phyllis M TePaske

**Address:** 1731 W Cty Rd W Winter WI 54896

**Phone:** 715-332-5510

**Property description:** Prt NESE Prt Lot 5 CSM 6/31 #1128

**Vol & pg no of deed & survey:** DOC # 215044

**Acreage and lot size:** 5.74

**Change from Dist:** RR-1 to Dist: C-1

**Purpose of request:** TO INSTALL ADDITIONAL UNITS  
2 Rental cabins were built on this  
property in 1991/1992. Proper permits were received.  
This property should have been zoned C1 for commercial  
but was not. We wish to change to correct zoning so  
additional improvements can be made to this property.

**Anticipated length of presentation (circle one):** (15 min.) / 15-30 min. / >30 min.

**Date of Public Hearing:** 9-16-16

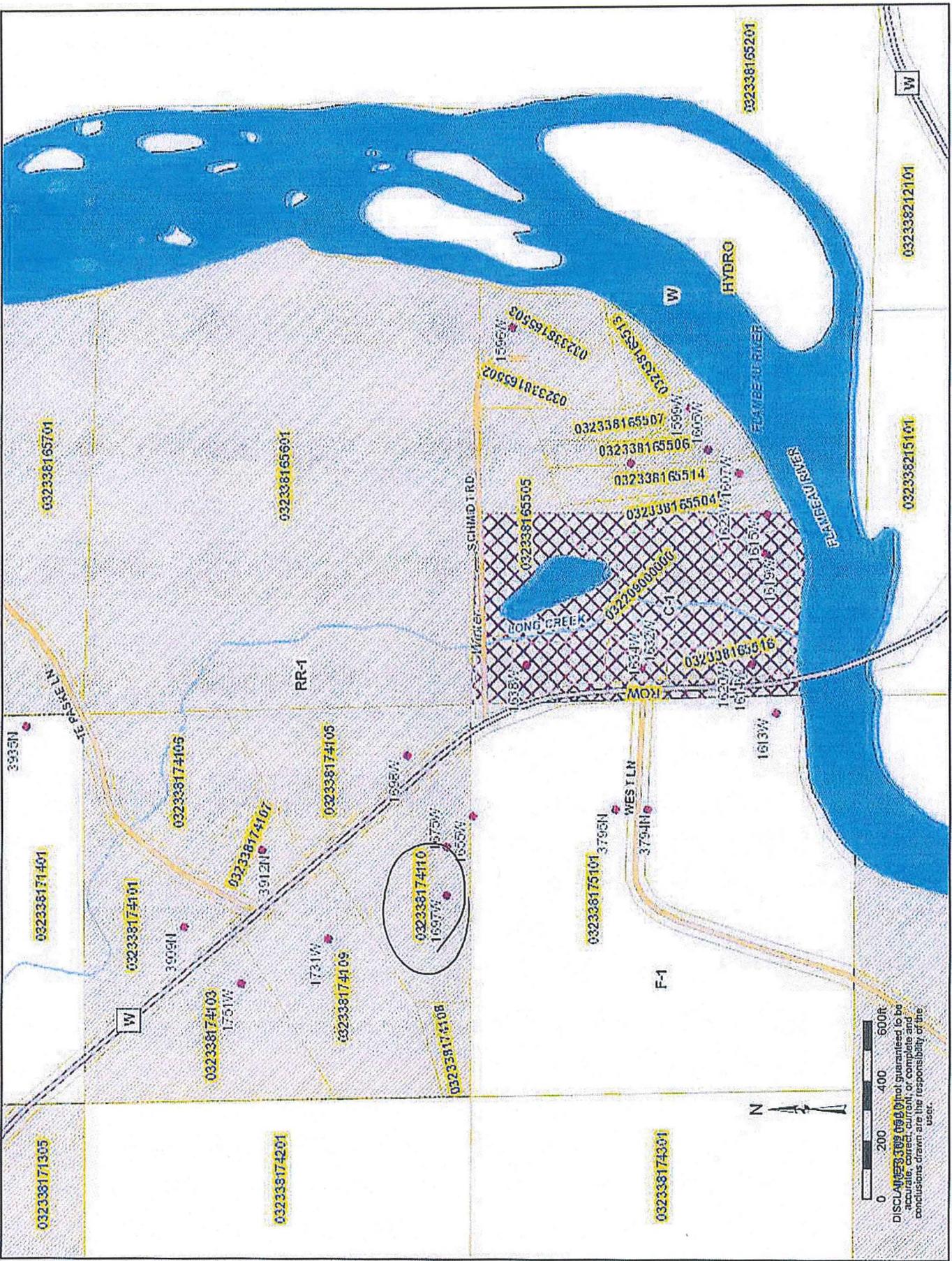
Arie A. TePaske

Phyllis M. TePaske

**Name, address, & phone of agent:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

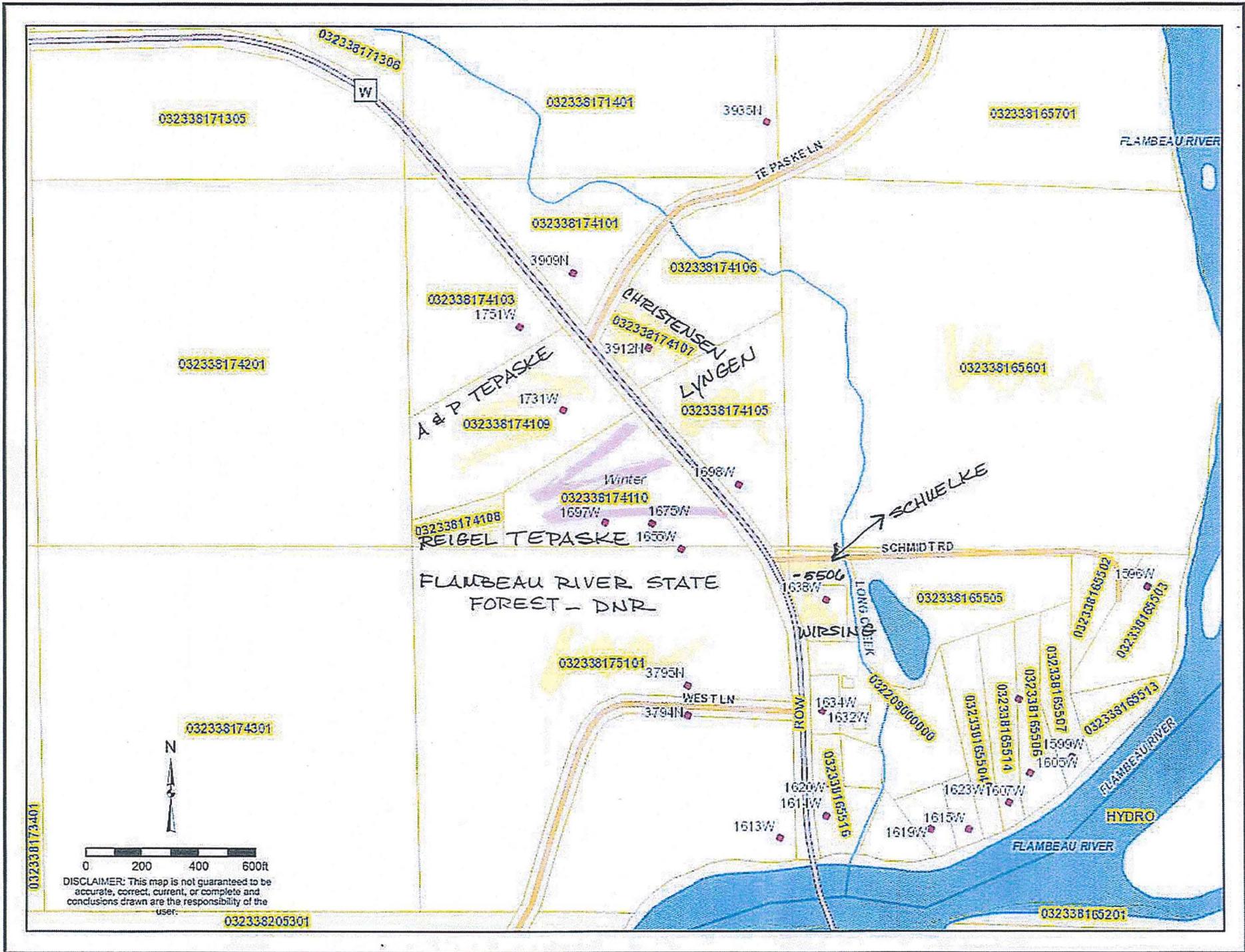
Signature of property owner required.

The above hereby make application for a rezone.  
The above certify that the listed information  
and intentions are true and correct.  
The above person/s hereby give permission  
for access to the property for onsite inspections.



0 200 400 600R

DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.



032338171305

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3935H

032338165701

FLAMBEAU RIVER

032338174201

032338174101

3909N

032338174106

032338174103  
1731W

CHRISTENSEN  
LYNGEN

032338165601

A & P TEPASKE

1731W

032338174105

Winter

1698W

032338174110

1697W

1675W

1655W

032338174108  
REIBEL TEPASKE

SCHUELKE  
SCHMIDT RD

FLAMBEAU RIVER STATE  
FOREST - DNR

-5506  
1638W

LONG CREEK

WIRSIK

ROW

WEST LN

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032338165516

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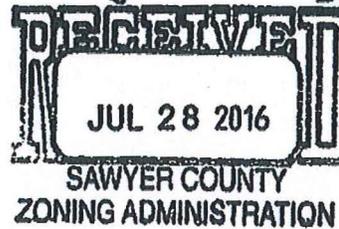


Town of STONE LAKE.  
County of Sawyer

July 26 2014  
Date

SUBJECT: Change of Zone District Application

TO: Sawyer County Zoning & Conservation Administration  
10610 Main St. Suite 49  
Hayward, Wisconsin 54843



Owner: STONE LAKE LUMBER LLC.

Address: 16853 W MAIN ST STONE LAKE

Phone: 715-865-2000

Property description: Village of Stone Lake Original Plat.  
LOTS 6-8 Block 6 RM TRUCK. LC.

16851 W 1ST STREET NORTH

Vol & pg no of deed & survey: TWO CONTRACT 401527

Acreage and lot size: .303

Change from Dist: R-1 to Dist: C-1

Purpose of request: COMMERCIAL STORAGE SHED (LUMBER)

Anticipated length of presentation (circle one): <15 min. / 15-30 min. / >30 min.

Date of Public Hearing: 9-16-16

Name, address, & phone of agent:

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke, written over a horizontal line.

Signature of property owner required.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The above hereby make application for a rezone.  
The above certify that the listed information  
and intentions are true and correct.  
The above person/s hereby give permission  
for access to the property for onsite inspections.



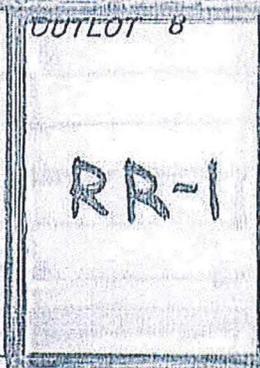
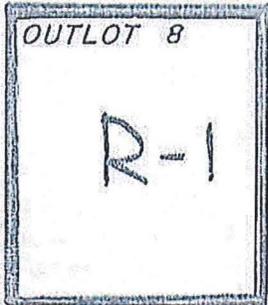
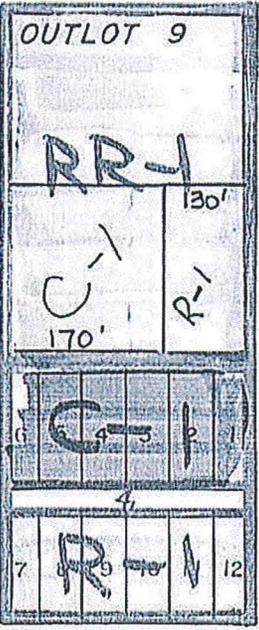
C-1

A-1

THIRD STREET NORTH

OUTLOT 8

OUTLOT 7

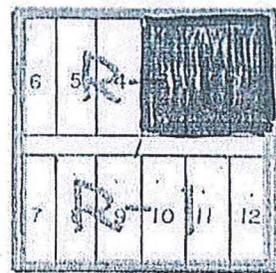
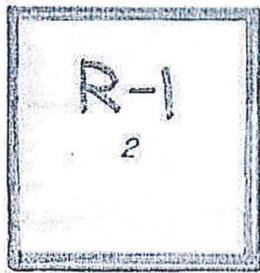
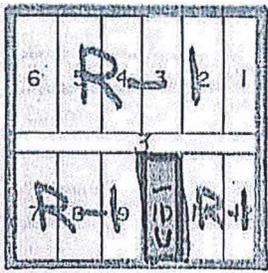
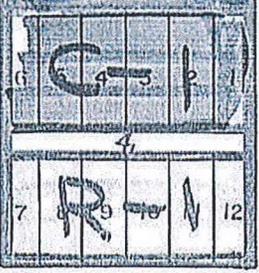


SECOND

STREET

NORTH

OUTLOT 6

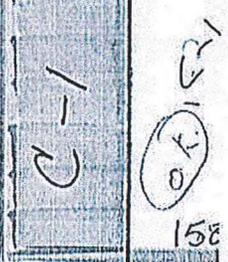
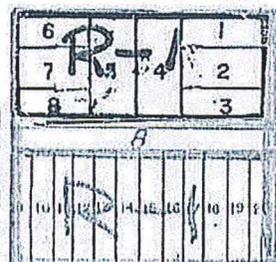
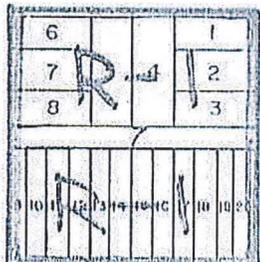
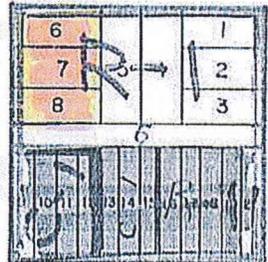
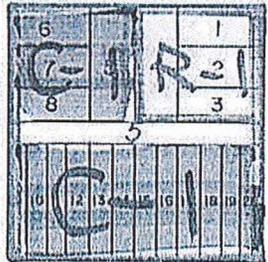


FIRST

STREET

NORTH

70'



AVENUE

AVENUE

AVENUE

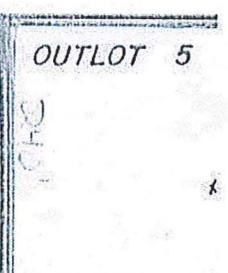
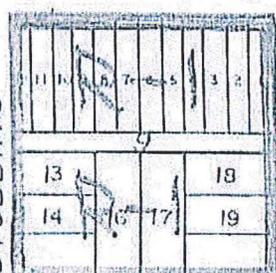
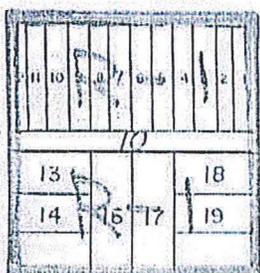
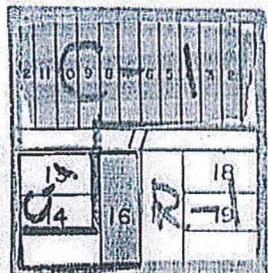
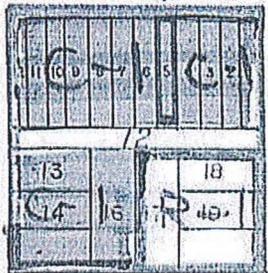
AVENUE

RR-2 MAIN

STREET

(C.T.H. "F")

S.T.H.

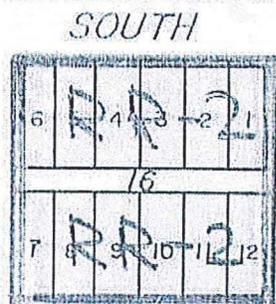
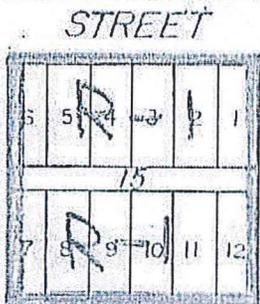
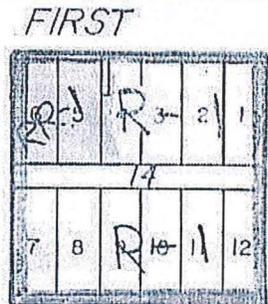
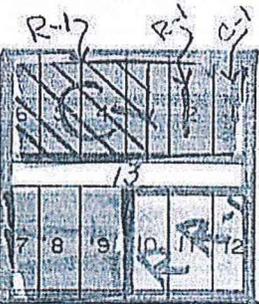


GIBSON

FROST

STUBBINS

JACKSON



SECOND

STREET

SOUTH

OUTLOT 2

OUTLOT 1

OUTLOT 3

OUTLOT 4



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**Resolution \_\_\_\_\_**

**RESOLUTION TO TRANSFER FUNDS FROM THE 2016 GENERAL FUND TO THE 2016 LAND & WATER CONSERVATION FUND**

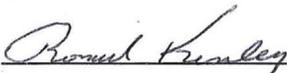
**WHEREAS**, the Land & Water Conservation Fund Balance has a deficit balance of \$31,842 as of December 31, 2015; and,

**WHEREAS**, the deficit is from the annual county match portion of a grant not funded; and,

**THEREFORE BE IT RESOLVED**, that the Sawyer County Board of Supervisors approves transferring \$31,842 from the General Fund to the Land & Water Conservation Fund to cover the fund balance deficit.

**FISCAL IMPACT: None – Transfer of Funds**

Recommended for adoption by the Sawyer County Administration Committee this 20<sup>th</sup> day of October, 2016.

  
\_\_\_\_\_  
Ron Kinsley, Chairman

  
\_\_\_\_\_  
Bill Voight, Vice Chair

  
\_\_\_\_\_  
Dale Schleeter, Member

  
\_\_\_\_\_  
Brian Bisonette, Member

  
\_\_\_\_\_  
Kathy McCoy, Member



## Sawyer County LiDAR Summary

LiDAR can be thought of as sonar in the air. It is a tool to accurately map the county in a 3D format. It will produce one foot contours in elevation and measure vertical objects with 4 inch accuracy. (This is a rather crude explanation of LiDAR)

### Summary:

- Sawyer County in one of six of Wisconsin's 72 counties that do not have LiDAR.
- The US Geological Service (USGS) is offering grants to fund ½ of acquiring the basic LiDAR package. For Sawyer County the USGS grant amount would be \$169,875. It is uncertain how long these grants will be available. The new administration may have different funding priorities.
- The Wisconsin Land Information Program (WLIP), Wisconsin Department of Administration has partnered with Ayres Associates to apply for USGS grants on behalf of several counties. They have offered Sawyer County the opportunity to participate. WLIP is of the opinion that the larger the grant request, the better the chance of success.
- If the grant is obtained our portion of the cost, to be paid over two years, would come from fees retained from the Register of Deeds office and grants from WLIP. No additional taxes would be needed to fund this project.
- If the grant request is not successful, we will not proceed with the acquisition of LiDAR
- LiDAR is not a required benchmark for WLIP Strategic Initiative Grant funding. WLIP will give Sawyer County a waiver to use retained fees and grants to acquire LiDAR before completion of required parcel data benchmarks. We have been told by WLIP they are very interested in all Wisconsin counties having LiDAR.
- In an email poll, most Sawyer County Land Information Council members recommend that funding be used to complete WLIP parcel data benchmarks before LiDAR acquisition. Not all Land Information Council members voted in the poll. It is hard to qualify the value of the WLIP parcel data benchmarks. The benefits may not approach the value of the USGS grant. There is money in the 2017 budget to work on WLIP parcel data benchmarks. Acquiring LiDAR is part of our 2016-2019 land information plan. Since it is uncertain how long USGS grant funding will be available, it makes sense to change priorities and move ahead with the LiDAR grant application, possibly forgoing for the moment, the benefits of the WLIP parcel data benchmarks.
- The LCO Tribe has indicated they have an interest in using LiDAR.

## Overview of LiDAR in WI

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- First projects started in 2005 with populated areas
- Big push in 2010-11, CDBG fed grants, shovel ready follow on to WROC 2010
- 2012-15 counties funded their own project completely out of pocket due to increased demand for floodplain mapping
- 17 counties in 2015 under WROC contracts
- 2 3DEP LiDAR counties in fall 2015, first counties with 3DEP funding
- 5 counties completed 3DEP LiDAR in Spring 2016
- If the 2017 Grant is successful only 3 counties will be without LiDAR data

### What is lidar?

- Laser sensor mounted in the belly of an fixed wing aircraft – Cessna type twin engine
- Now the standard technology in the geospatial industry for large area topographic mapping
- Sensor emits lasers at 400 pulses per second, lasers hit the earth and echo back to the sensor
- Use the speed of light to determine exact 3D location of each point
- Point cloud is created that contains 10+ million points per square mile
- Vertical accuracy of the ground surface is 4 inches.

### Standard Delivered Datasets

- Classified Point cloud
- Hydro Breaklines
- Capable of 1-ft contours
- Digital Elevation Model
- Digital Surface Model
- Intensity Images

### 3DEP opportunity

- Ayres Associates/DOA complete the grant
- USGS would cover 50% of the base project cost if the grant is successful
- Application is built on success of first two applications, all WI applicants were awarded
- Already working with several Wisconsin counties about lidar through the WROC process
- Used WROC to demonstrate ongoing grassroots efforts of local governments working together

## LiDAR Use testaments in Wisconsin

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Brett with Planning Dept in St. Croix Co

*The county used the lidar to determine the highest risk areas for nutrient loading into the St. Croix River. The lidar derived DEM was used to model where the deepest drainages with the steepest slopes in the county. This was compared to agricultural areas to determine which streams had the strongest need for evaluation and potential remediation.*

Pam with Zoning Dept in Forest Co

*I know that one of my bills for a dam break analysis would have been 50% less if we would have had lidar. We also need lidar to determine culvert crossing locations. This currently costs 5-10k*

*per culvert to hire and engineering firm to go into the field to collect the data. Lidar would greatly reduce the cost of these projects to the county.*

#### Lori from Eau Claire Co

*The Eau Claire County Highway Department uses LIDAR data mainly to create digital terrain models (DTM's) in AutoDesk Civil3D. The LIDAR data is used in 3D modeling for road and bridge design, drainage system design, contour mapping, and hydrologic and hydraulic 3D modeling.*

*For preliminary planning purposes, we create a DTM from our roadway centerline survey data and the LIDAR data in a Civil3D drawing. This gives us a good representation of the existing conditions without having to deploy a survey team to collect the topographic data. This saves the County substantial dollars when totally accurate data is not required in the preliminary planning stages.*

*When projects are in the design stage we import our survey data collected within the highway right-of-way and the LIDAR data into Civil3D. We generate existing ground conditions based on this merged data. The availability of LIDAR greatly diminishes the need for collecting data outside of the highway-right-of-way by our survey staff.*

*The LIDAR data is adequate for hydrologic and hydraulic modeling and can be readily imported into 3D modeling software eliminating the need for digitizing contour mapping.*

*Having the LIDAR data readily accessible provides the engineering staff with immediate data, thus eliminating the need to pull our limited survey staff off of current projects to deploy them to a new area of concern.*

#### Jewel Engineering

*Two recent projects we have taken advantage of existing LIDAR information include CTH N Reconstruction Project in Crawford County and Rainbow Road Reconstruction in Sauk County.*

*CTH N in Crawford County has a lot of topography and is about 3.5 miles in length. Our survey crews established that the existing LIDAR data was very accurate (spot checking along the entire corridor) and therefore was used for our base mapping. By using this data the County had purchased, the Highway Department saved approximately \$15,000 in conventional survey costs.*

*The Rainbow Road project was smaller, but once the accuracy of the data was confirmed, we still saved the Township approximately \$2,500.*

*In 2008 we were hired by the Town of Spring Green, located in Sauk County, to do a study of a large flooding event that took place in June of 2008. The flooding destroyed many homes and obliterated approximately 4,400 acres of corn and beans for the area farmers. The study was needed to determine the cause of the flooding and if there were any feasible alternatives to eliminate future flooding.*

*Lidar was used to determine many factors including: total number of flooded acres divided between crops planted, topography of flooded areas, etc. etc. etc.*

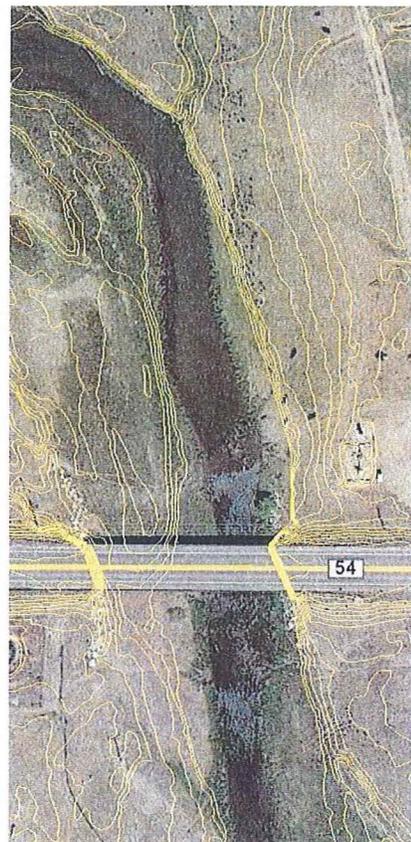
## Applied Applications for Airborne LiDAR Data

### Vilas County

- Forestry – validate volumes of gravel piles delivered for road repair as claimed by contractor
- Letter Of Map Amendment (LOMA) filed to get homes out of the flood zone and reduce their home owners insurance
- LiDAR data has been used for developing recreational trails maps search and rescue maps
- Land & Water Conservation is using LiDAR for slope and flow direction, and delineating drainage basins.
- Emergency Management used lidar to map and validate inundation zones below dams for emergency action planning

### St. Croix County

- Identify Locations with High Erosion Potential



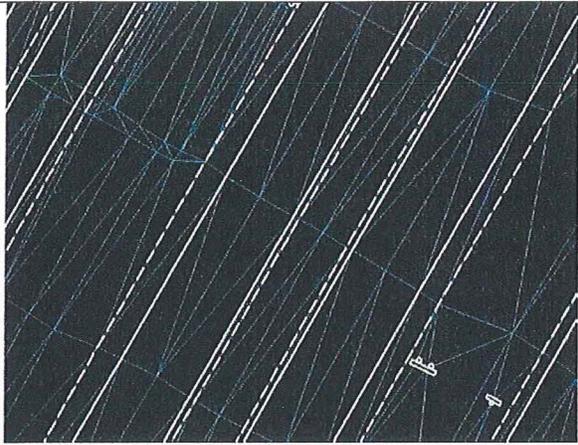
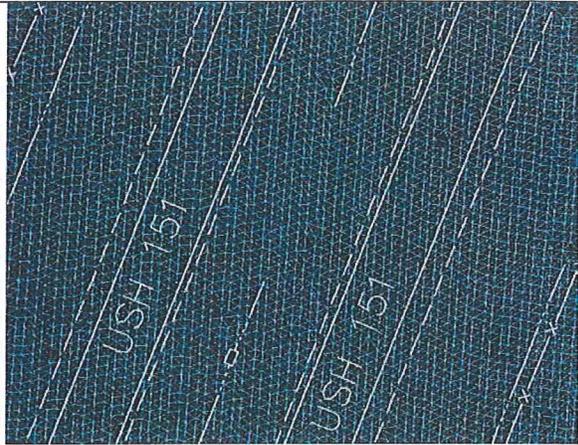
### Oneida County

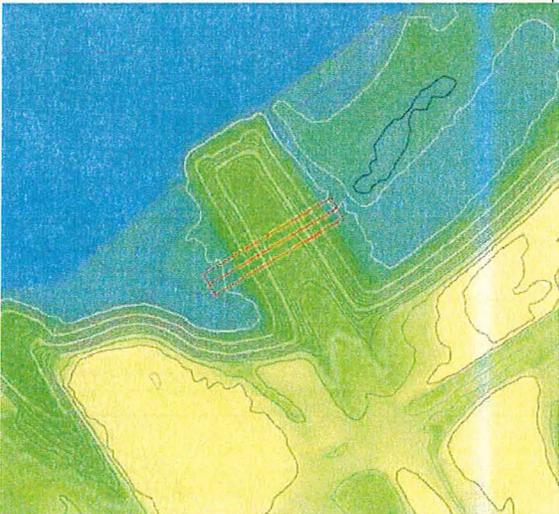
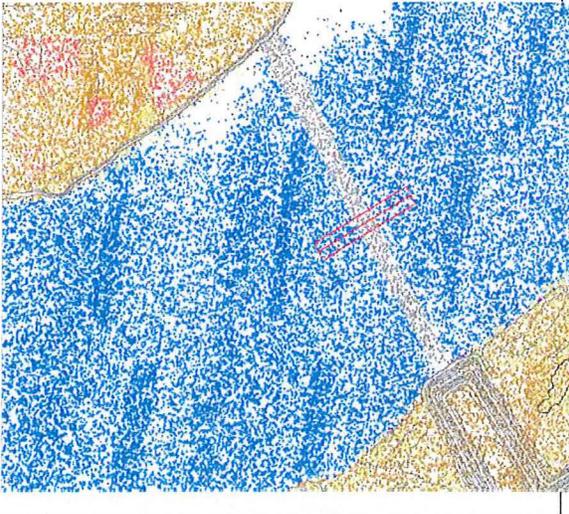
- Forestry for finding overgrown logging roads and trails, also hillshade and contour information for a custom map of the county forest.
- Zoning uses that information to get a handle on slopes right up front before doing any on site visits.
- Hydro breaklines to determine the water's edge when parcel mapping.
- Point data to determine the elevation of a snowmobile bridge and how it changed over time since it was built.

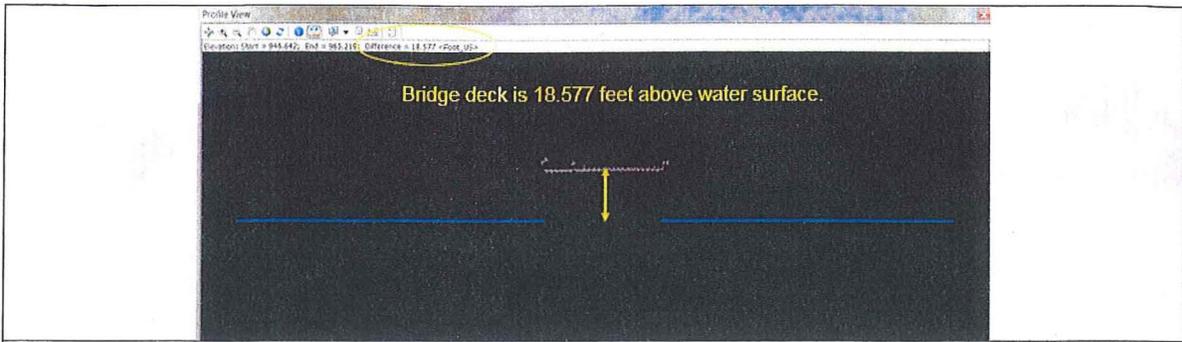
### Advantages of LiDAR for County Hwy Departments

- Design limits can be better determined, and with higher density blending the design to existing elevations is easier. This is for the road elevations, longitudinal slopes, cross slopes and drainage patterns
- Share data with other departments

- Land conservation department — hydrology, erosion prone slopes, floodplains
- Zoning/Land Use—drainage patterns, culvert sizing, floodplains
- Rely on LiDAR for topographic mapping. Surveyors focus on key items like culverts, bridges, edge of pavement and road centerline.
- Produce rapid cost estimates or conceptual plans without delay for field work. Determine which projects or how long projects can be for department budgeting. A resource to scope projects.
- Reduce the cost to the county when consultants are hired for highway projects due to time savings in the field and in the office

Traditional Survey surface vs LiDAR derived surface	
Traditional Land Survey	Aerial LiDAR
	
Notice the density of the survey points in the LiDAR surface vs the traditional survey.	

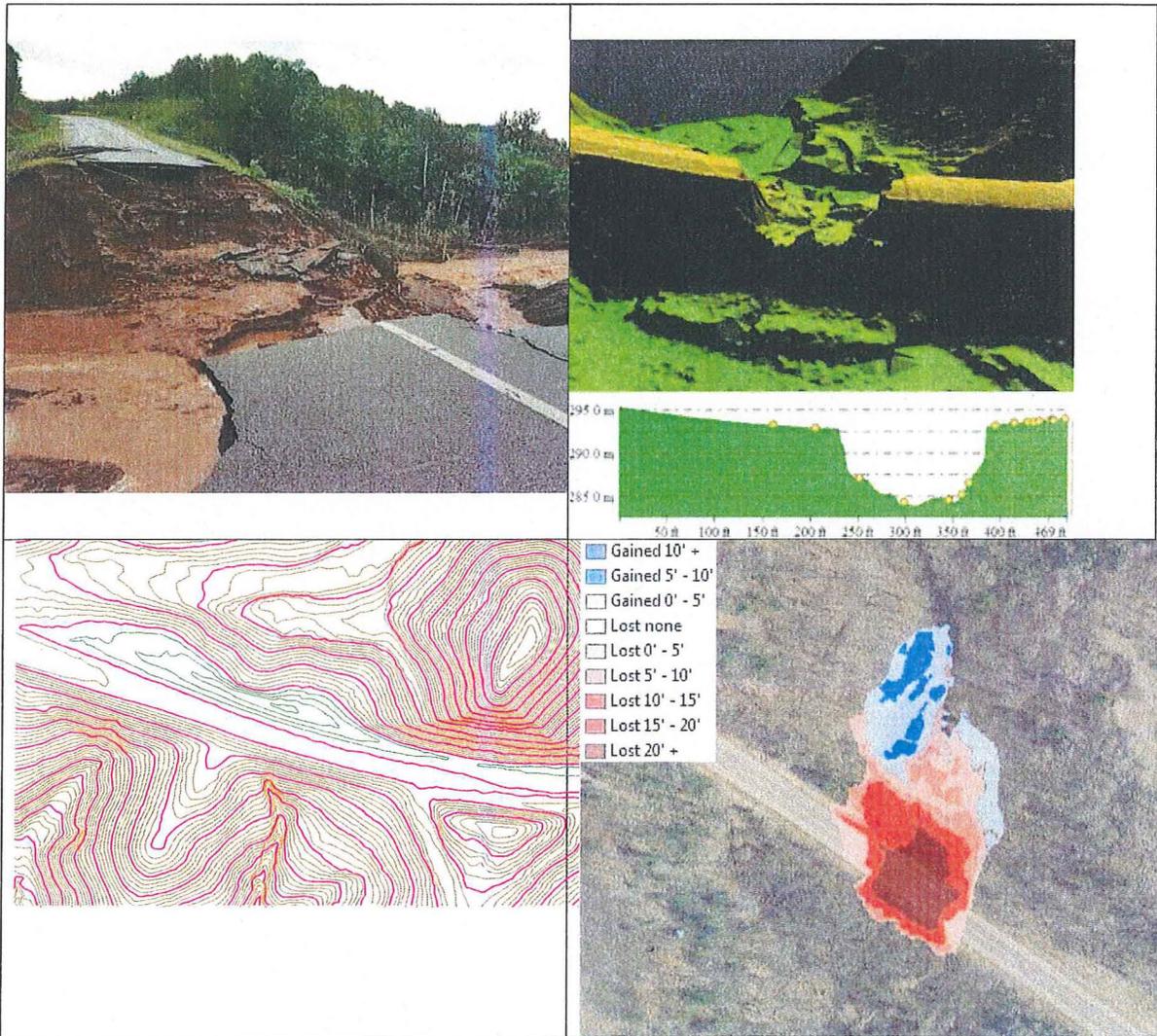
Profile Measurements	
	

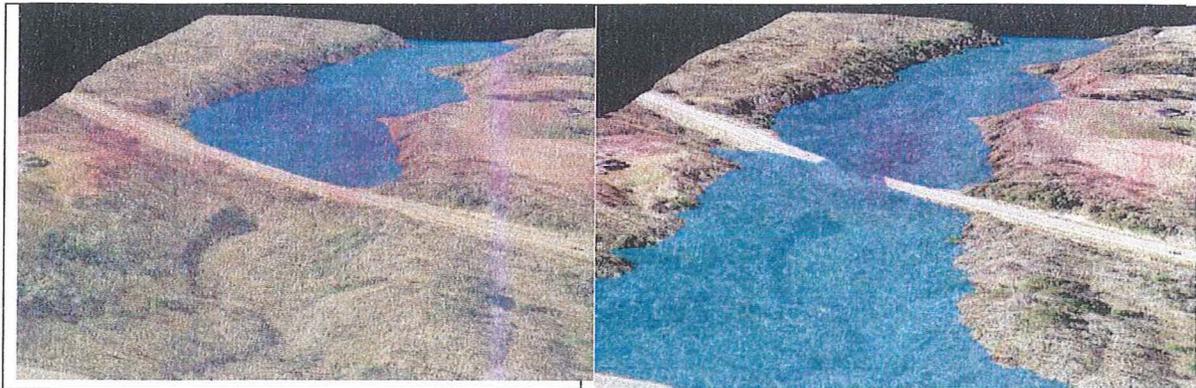


Profiling can be used for many things to understand natural and manmade structures. In this case we are looking at bridge clearance over a waterway.

### Ashland County Flooding, July 2016

Having LiDAR available for before the flooding and the supplemented after the incident fast tracked estimating damages, producing engineering designs for repairs, estimating construction costs, and helped with safety plans for the construction crew on the site.

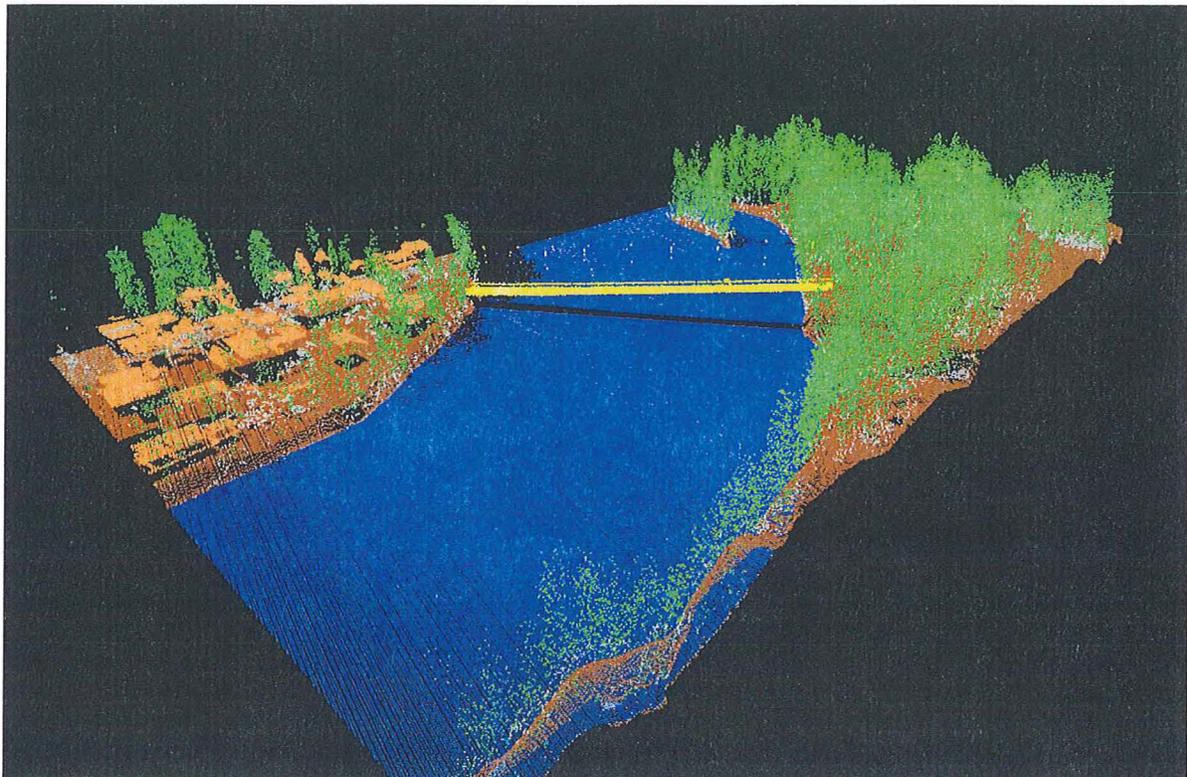




**Other General uses:**

Floodplain analysis  
Drainage studies  
Hazard Mapping  
Forest canopy studies  
Estimating tree stand value  
Erosion Analysis  
Terrain/Slope analysis  
Feature extraction

Vegetation analysis  
Wide area topographic survey  
Engineering planning/design  
Surface change analysis  
Zoning setback compliance  
Locating tower sites  
Locating archeological sites  
Mapping water bodies



**LiDAR Comments from the Land Information Council email poll Sept. 30, 2016**

I can state that Zoning and Conservation, Land Records, and the County Surveyor departments all support LiDAR acquisition, but getting our records scanned, indexed, and available online to the public is a priority over LiDAR. Staff from those departments think that scanning and indexing records would increase efficiencies and should be a priority.

Dan Pleoger

I agree with Dan fully. While I would like LiDAR, scanning would open up considerably more time.  
Dale Olson

Absolutely agree! I vote no, it seems too rushed and there are other projects we could spend the funds on.

Paula

Go for it.  
Dianne M. Ince

I would like to see the money spent on having the survey records on line and the PLSS corner work continue.  
Jesse Suzan

With other benchmarks that need to be met I would say no to this proposal. Lavonne Nedlose

I agree with Paula and Lavonne. I think our money could be better spent on completing the WLIA benchmarks first. Kimberly Wendt

Dan , considering the cost , i think it would be prudent to finish your existing benchmarks first and address lidar later . Fred Goold

If there were minimal cost in dollars and staff time, I would say yes.  
But it seems very expensive in both time and money. Plus would not include flood plain data.  
I vote no.  
Mike Coleson

In our efforts to continue to modernize our land records I believe we should stick with the objectives set forth in the 3 year land records plan that we completed earlier this year. Although LiDAR is a possible future project I believe that we still need to work on getting our corner records online, as well as getting documents in our office and the Zoning office scanned and indexed. I'm sure everyone on the council has read through the Plan and know it inside and out, and can see that we have projects listed. Aside from meeting our benchmarks we have a project for upgrading register of deeds software, updating our parcel mapping and getting our corner records online. I think those should be the priorities.  
Brian

[ftp://doafpt1380.wi.gov/doadocs/WLIP/CountyLandInfoPlans/Sawyer Co Land Info Plan 2016 Final.pdf](ftp://doafpt1380.wi.gov/doadocs/WLIP/CountyLandInfoPlans/Sawyer_Co_Land_Info_Plan_2016_Final.pdf)

## **LiDAR Comments from other interested parties**

Good Morning! Here are some answers that I got back and my thoughts as to how Emergency Mgt. could use LIDAR.

Flood inundation zones

Topography for contour and elevation- preparedness

Search and Rescue- Hazards and topo

Wildfires- Topo can influence outcome/travel of fires

Storm Damage reporting and mitigation efforts

Pat Sanchez - Emergency Management

The highway department could use the data by providing it to our design engineers to aid them in determining elevations used in road plans. Unfortunately we do not have the funds to engineer the majority of our road construction projects. The only time we use an engineer is if there are state/federal funds available for a cost share, and when that happens we are only paying 20% of the total bill. Don't count on justifying this expense from savings on highway department engineering, it isn't a big ticket item.

Gary Gedart- HWY Department

LIDAR, which stands for Light Detection and Ranging, is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth. These light pulses—combined with other data recorded by the airborne system— generate precise, three-dimensional information about the shape of the Earth and its surface characteristics.

And this is a summary of uses

Lidar will allow the county to get high accuracy elevation data where we have not had any before. Zoning will be able to visualize flood elevations and their relation to structures. Forestry could use it to estimate volumes, highway could use it for planning roadwork. We could show if there is a building footprint on a tax parcel and compare that to the tax roll to find parcels that do not have an improvement value but have improvements. Basically it's another tool we can use to do our jobs more accurately and productively.

Brian DeVries - Land Records

Yes LiDAR could definitely save a lot of time for hydraulic modeling type projects and also results in much better mapping overall. The state of Minnesota has had the whole state flown and LiDAR for several years and really helps with hydrologic modeling and mapping.

Hope all is well with you too.

Let me know if you would like additional information.

Brad Woznak, PE,PH,CFM | Senior Professional Engineer